

PVAAS Overview: Evaluating Growth, Projecting Performance

PVAAS Statewide Core Team
Winter 2009



- What do you think you already know about PVAAS?
- What do you want to find out about PVAAS today?

Goal: PVAAS will be used by teachers and administrators for annual school evaluation and planning, grade/subject level evaluation and planning, and for student level planning.

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PDE Provides The Data Tools...

PA AYP	Public website that reports all AYP-related data on district, school, grade and subgroup. -- Subject area information is also available.
PSSA Data Interactive by eMetric	Interactive web-based tool for analyzing PSSA data by district, school, grade, subgroup and student. -- Reporting category information is also available.
PVAAS	Web-based value-added tool that reports growth of cohorts of students and projections for individual students for performance on future PSSA assessments.
4Sight Member Center	Interactive web-based tool for benchmark assessment data by grade, class, subgroup and student. -- Intended to be formative and used often throughout the school year.

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PDE Provides The Framework...

“Getting Results!™”

A Framework for Continuous School Improvement Planning

The framework provides guiding questions for root cause analyses in the following data environments:

- PSSA and AYP inquiry
- **PVAAS**
- 4Sight Benchmark Data
- Local Assessment Data Sets

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What Is PVAAS?



PVAAS IS:

- A statistical analysis of existing assessment data.
- A realistic measurement of a school's progress/growth over time.
- Progress data to *add to* achievement data as schools are analyzing their work with students and making improvement plans.



PVAAS:

- Is not another test.
- Is not being used for teacher-level accountability in Pennsylvania.
- Does not use teacher-level data elements.
- Does not yield a metric on the effectiveness of a teacher.



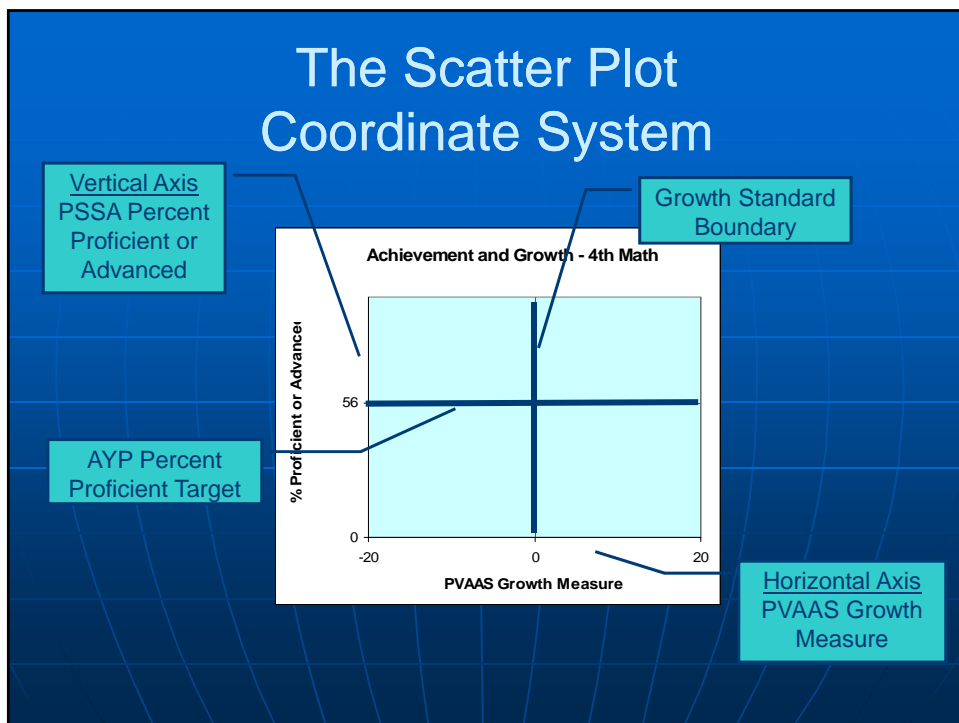
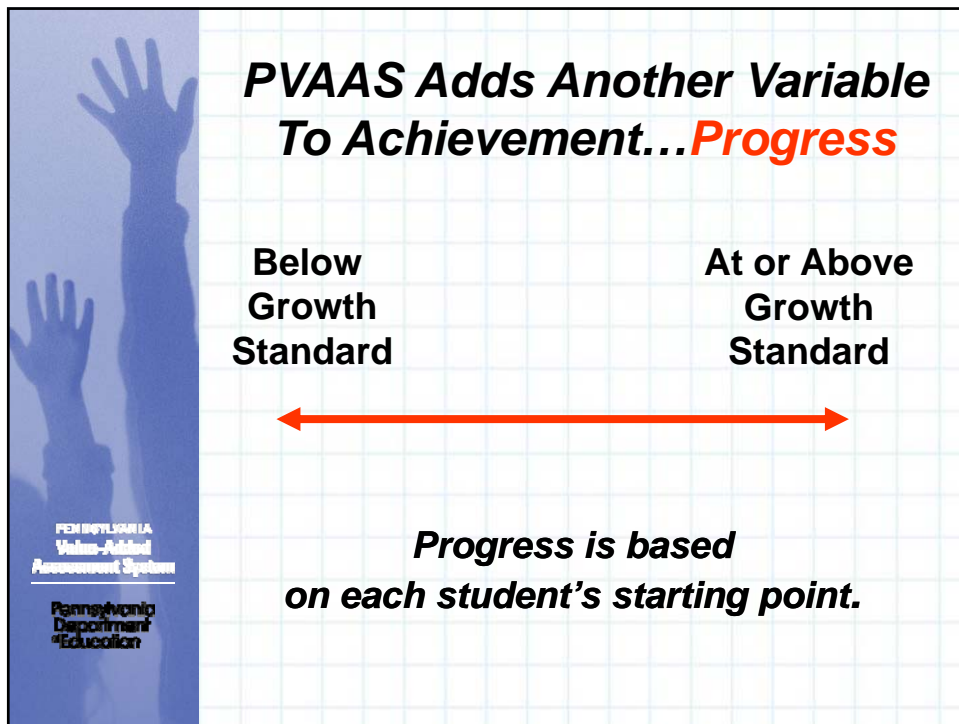
Current Data Collection Approaches

High Achievement

Average Achievement

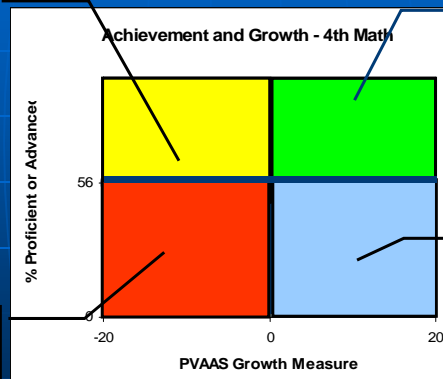
Low Achievement

*Achievement is based
on each student's ending point.*



Scatter Plot Quadrants and Their Meanings

Quad 2
Adequate Achievement
Negative Growth

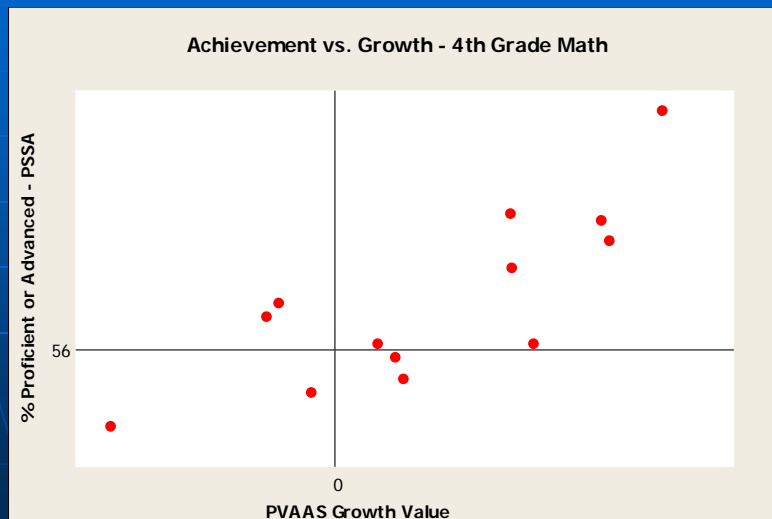


Quad 1
Adequate Achievement
Positive Growth

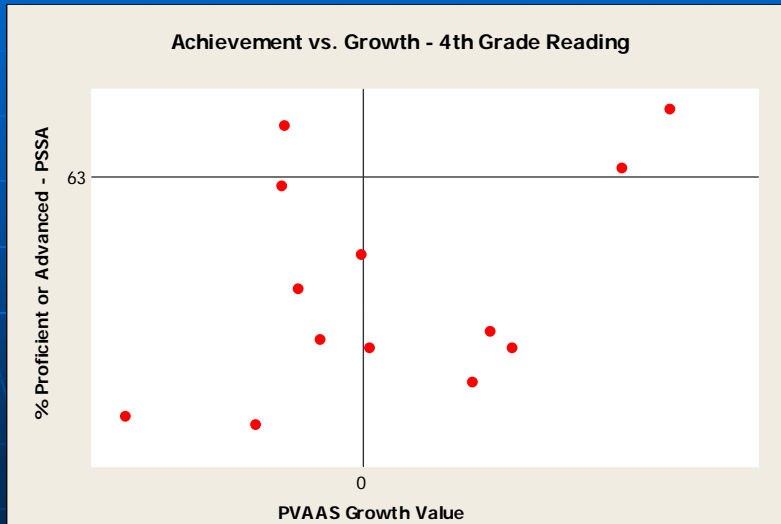
Quad 3
Below Adequate Achievement
Negative Growth

Quad 4
Below Adequate Achievement
Positive Growth

Example: Regional Scatter Plot



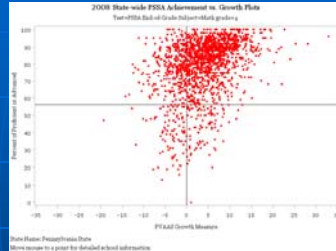
Example: Regional Scatter Plot: Same Schools



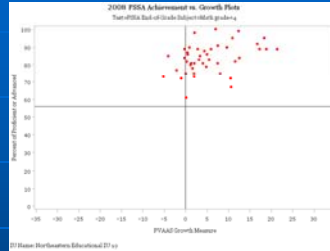
HOW ABOUT IU 19?

State vs. IU 19 Scatter Plots Grade 4

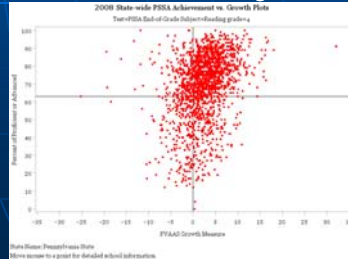
Statewide Math



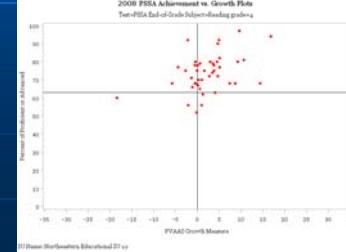
IU Math



Statewide Reading

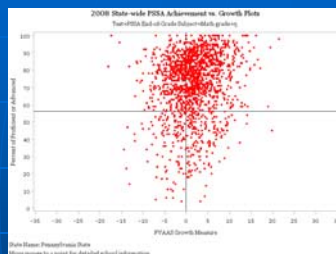


IU Reading

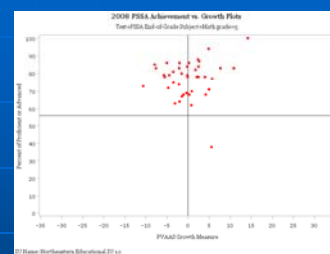


State vs. IU 19 Scatter Plots Grade 5

Statewide Math



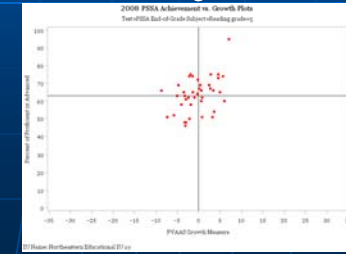
IU Math



Statewide Reading

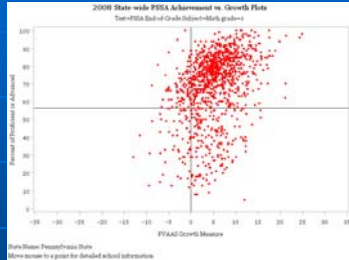


IU Reading

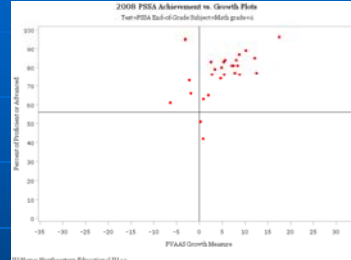


State vs. IU 19 Scatter Plots Grade 6

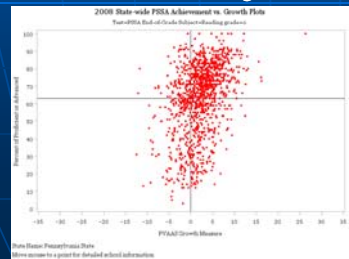
Statewide Math



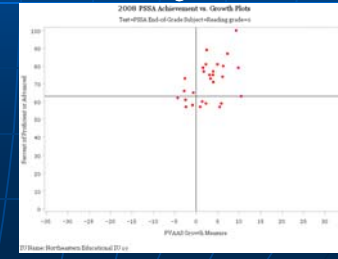
IU Math



Statewide Reading

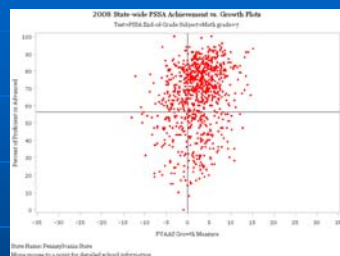


IU Reading

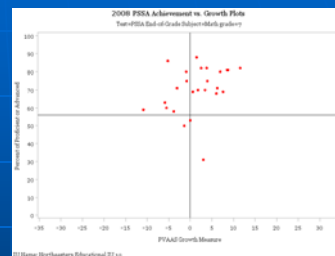


State vs. IU 19 Scatter Plots Grade 7

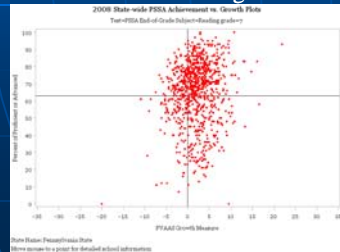
Statewide Math



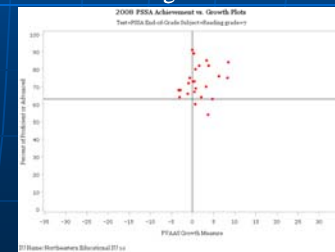
IU Math



Statewide Reading

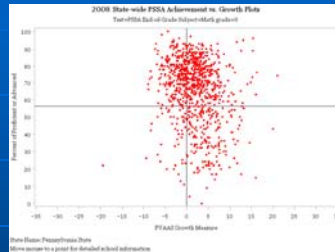


IU Reading

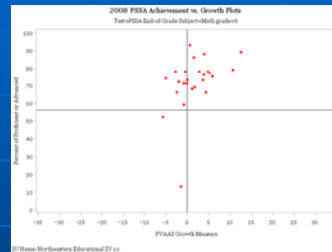


State vs. IU 19 Scatter Plots Grade 8

Statewide Math



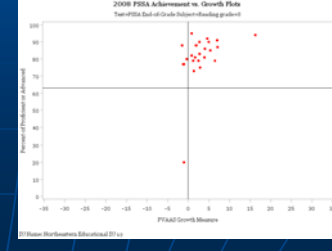
IU Math



Statewide Reading



IU Reading



The TWO PVAAS Methodologies

Looking Back/Evaluation...

Value-added Growth Reports For
Cohorts of Students

**Looking
Forward/Planning...**

PVAAS Projection Reports
For Individual Students
and Cohorts of Students

Today

NO methodology to consider teacher effectiveness.



Student Projections

**Wouldn't it be great
to know the likelihood
that a student will
be proficient on a
future PSSA?**




Student Projection Methodology

- A separate longitudinal modeling process focused on the performance scores of individual students.
- The model uses all of the available data (both math and reading) to project future PSSA performances in Math, Reading, Science and Writing.
- Projections can be calculated for an individual student or groups of students.

PVAAS Fall 2008 Reporting: Projections to Basic, Proficient, Advanced

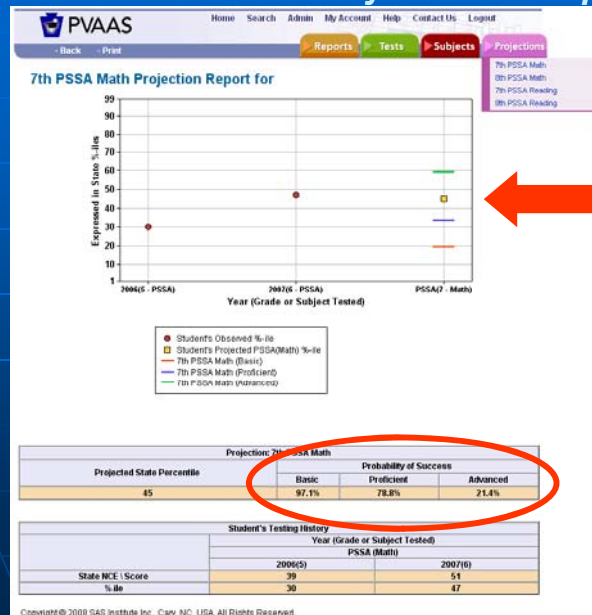
Math and Reading:	Writing:	Science:
➤ 3 → 4 or 5	➤ 3 → 5	➤ 3 → 4
➤ 4 → 5 or 6	➤ 4 → 5	➤ 4 → NA
➤ 5 → 6 or 7	➤ 5 → 8	➤ 5 → 8
➤ 6 → 7 or 8	➤ 6 → 8	➤ 6 → 8
➤ 7 → 8	➤ 7 → 8	➤ 7 → 8
➤ 8 → 11	➤ 8 → 11	➤ 8 → 11


Grade PSSA
Last Taken


Grade PSSA
Last Taken


Grade PSSA
Last Taken

PVAAS Student Projection Report



PVAAS Projection Reports for Groups of Students

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Back Reports

Student Last Name:

Restrict Search by Grade Last Tested? ☒ Yes ☐ No

Restrict Search by District and/or School? ☐ Yes ☒ No

Restrict Search by Race? ☐ Yes ☒ No

Restrict Search by Sex? ☐ Yes ☒ No

Restrict Search by Demographics? ☒ Yes ☐ No

☒ Economically Disadvantaged ☐ Special Education ☐ Title 1 ☐ Title 3
☐ Not Enrolled Full Year ☐ Limited English Proficiency ☐ Migrant ☐ Orfled
☐ 504 Plan ☐ Tutor Eligible ☐ Tutor Received

Restrict Search by Projected Proficiency Level? ☒ Yes ☐ No

PSSA Lower: 70 % Upper: 100 %

Restrict Search by Projected Proficiency Level? ☐ Yes ☒ No

Search

by Subgroup and/or Projected Proficiency Level

Identified Students Meeting Search Requirements

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Back Print Reports

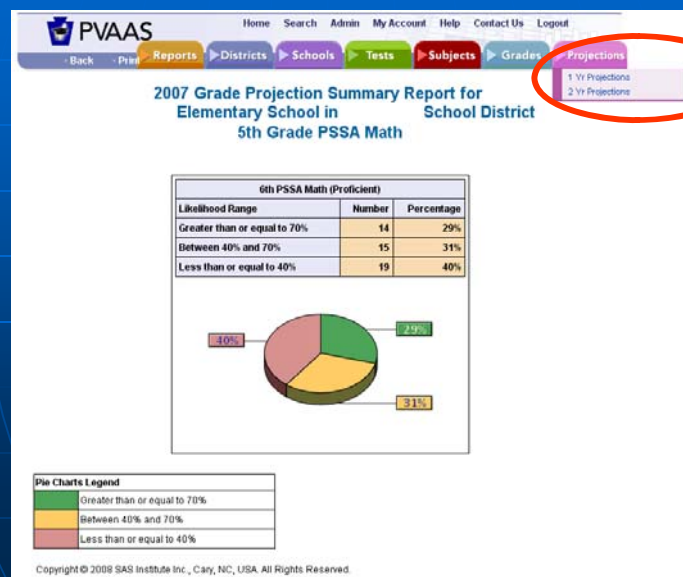
Search Results: 1 - 100 out of 167


Student	District	School	Sex	Race	Grade	Gift	LEP	ED	PA1
AFFELD, LLOYD	Hemlock School District	Houston Elementary School	M	A	5	N	N	Y	97.5
ALBERTO, JORDON	Hemlock School District	Kissinger Elementary School	M	W	5	N	N	Y	100.0
ARCINIEGA, MATILDA	Hemlock School District	Clinton Elementary School	F	B	5	N	N	Y	98.2
ARVAY, PATRICIA	Hemlock School District	Walnut Elementary School	F	W	5	N	N	Y	98.9
AUEL, LYNN	Hemlock School District	Green Leaf Middle School	F	W	5	N	N	Y	75.1
AUSTELL, NELLIE	Hemlock School District	Kissinger Elementary School	F	W	5	N	N	Y	99.6
BAITY, TAMI	Hemlock School District	Green Leaf Middle School	F	W	5	N	N	Y	73.7
BANDY, REED	Hemlock School District	Dawn Elementary School	M	W	5	N	N	Y	96.8
BAULT, QUINTON	Hemlock School District	Green Leaf Middle School	M	W	5	N	N	Y	99.2
BERNAL, CATHY	Hemlock School District	Freedom Elementary School	F	W	5	N	N	Y	94.9
BIDDER, JESSIE	Hemlock School District	Green Leaf Middle School	F	H	5	N	Y	Y	85.5
BINTNER, JOANNA	Hemlock School District	Walnut Elementary School	F	W	5	N	N	Y	95.2
BITTLE, TRACIE	Hemlock School District	Green Leaf Middle School	F	B	5	N	N	Y	92.2
BLAIS, TANYA	Hemlock School District	Green Leaf Middle School	F	W	5	N	N	Y	91.3
BLOUSOM, CAROLYN	Hemlock School District	Walnut Elementary School	F	W	5	N	N	Y	92.7
BORIER, FREDRICK	Hemlock School District	Green Leaf Middle School	M	W	5	N	N	Y	99.9

Projection Summary Reports

- What is it?
 - Report that summarizes the numbers and percents of students in likelihood ranges of performing at the proficient level on a future PSSA exam.
- How might a school use this report?
 - Intervention Planning
 - Resource Allocation
 - Strategic Planning
 - School Improvement Planning
- Cautions
 - This report provides another indicator about likelihood of future performance.

Grade Projection Summary Report





Value-Added

**Wouldn't it be great
to know if you made at
least one year's growth
with students last
tested in grades 4-8?
grade 11(NEW)?**

PVAAS Growth Methods

Testing	Subjects – Grades	Methodology
PSSA in consecutive years	Mathematics 4-8 Reading 4-8	Growth Standard
PSSA <u>not</u> in consecutive years	Writing – 5, 8, 11 Science – 4, 8, 11 Math & Reading – 11	Predictive

Summary: One Year's Growth

Growth Standard Method

Math and Reading – Grades 4 through 8

Cohort maintains its achievement position.

Predictive Method

Math & Reading – Grade 11

Writing – Grades 5, 8, 11 Science – Grades 4, 8, 11

Cohort's actual performance is as expected.





Value-added Measure of Cohort Growth Grades 4 through 8 in Reading and Math

- Comparison to a State Growth Standard
- The Growth Standard specifies the minimal acceptable academic gain from grade to grade for a cohort of students.
- The use of a Growth Standard creates the possibility that ALL schools can demonstrate appropriate growth.

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PVAAS Value-added Cohort Growth Descriptors – Grade 4 – 8

	Estimated gain at or above growth standard. Students in this cohort have made at least one year growth. All schools can achieve this rating.
	Estimated gain below growth standard but by less than one standard error. Students in this cohort have grown less than the standard.
	Estimated gain below growth standard by more than one but less than two standard errors. Students in this cohort have fallen behind their peers.
	Estimated gain well below growth standard by more than two standard errors. Students in this cohort have made little progress.

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PVAAS School Report Grades 4 through 8

Every grade in
the school has
met or
exceeded a
year's worth of
growth?

("Getting Results!"™, p. 12)

Estimated School Mean NCE Gain					
Grade:	6	7	8	Mean NCE Gain over Grades Relative to	
Growth Standard:	0.0	0.0	0.0		
State 3-Yr-Avg:	0.3			Growth Standard	State
2006 Mean NCE Gain:	-4.2 R*			-4.2	-4.5
Std Error:	0.6			0.6	0.6
2007 Mean NCE Gain:	-1.8 R*	3.9 G	4.7 G	2.3	2.0
Std Error:	0.6	0.6	0.6	0.3	0.3
2008 Mean NCE Gain:	-1.3 R*	5.6 G	6.6 G	1.6	1.3
Std Error:	0.6	0.6	0.6	0.3	0.3
3-Yr-Avg NCE Gain:	-2.4 R*			-0.1	-0.4
Std Error:	0.3			0.2	0.2
Estimated School Mean NCE Scores					
Grade:	6	7	8		
State Base Year (2006):	50.0	50.0	50.0		
State 3-Yr-Avg:	50.9	50.8	51.6		
2006 Mean:			36.4		
2007 Mean:	40.7	41.4	39.9		
2008 Mean:	40.4	44.8	48.2		
2009 Mean:	40.6	46.0	45.4		

G - Estimated mean NCE gain equal to or greater than growth standard.
 Y - Estimated mean NCE gain below the growth standard by 1 standard error or less.
 R - Estimated mean NCE gain more than 1 standard error below the growth standard but by 2 standard errors or less.
 R* - Estimated mean NCE gain below the growth standard by more than 2 standard errors.

Your Turn! Interpret this report!

Estimated School Mean NCE Gain							
Grade	3	4	5	6	7	8	Mean NCE Gain over Grades Relative to
Growth Standard	0.0	0.0	0.0	0.0	0.0	0.0	
State 3-Yr-Avg		1.9		2.6			Growth Standard
2006 Mean NCE Gain		12.1 G		2.8 G			7.4
Std Error		1.7		1.5			1.1
2007 Mean NCE Gain		6.5 G	-3.9 R*	3.3 G	-1.5 R	2.9 G	1.5
Std Error		1.8	1.4	1.7	1.5	1.9	0.7
2008 Mean NCE Gain		7.9 G	-0.9 Y	8.3 G	-2.0 R	-0.4 Y	2.6
Std Error		1.5	1.5	1.4	1.6	1.4	0.7
3-Yr-Avg NCE Gain		8.8 G		4.8 G			3.8
Std Error		1.0		0.9			0.4
Estimated School Mean NCE Scores							
Grade	3	4	5	6	7	8	
State Base Year (2006)	50.0	50.0	50.0	50.0	50.0	50.0	
State 3-Yr-Avg	51.5	51.6	50.6	52.0	51.6	51.7	
2005 Mean	39.8		45.4				
2006 Mean	40.0	51.6	45.0	48.6	39.8		
2007 Mean	47.5	49.5	47.7	48.3	47.1	42.7	
2008 Mean	50.4	55.5	45.6	56.0	46.3	46.6	

G - Estimated mean NCE gain equal to or greater than growth standard.
 Y - Estimated mean NCE gain below the growth standard by 1 standard error or less.
 R - Estimated mean NCE gain more than 1 standard error below the growth standard but by 2 standard errors or less.
 R* - Estimated mean NCE gain below the growth standard by more than 2 standard errors.

11th Grade Growth Descriptors

Below	Observed performance is significantly BELOW the expected performance.
NDD	Observed performance is NOT DETECTABLY DIFFERENT than the expected performance.
Above	Observed performance is significantly ABOVE the expected performance.

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School Report

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Back Print Reports Districts Tests Subjects

2008 Pennsylvania District Value Added Report for PSSA Writing

Test	Grade	Year	N	Mean Student Score	Mean Score %ile	Mean Pred Score	Pred. Score %ile	District Effect	Effect Std Err	District vs State Avg
Writing	5	2008	465	1357.1	58	1377.5	61	-20.0	11.2	NDD
	8	2008	541	1397.8	60	1384.2	55	13.5	6.6	Above
	11	2008	431	1607.0	81	1535.5	68	70.0	9.4	Above

- Progress significantly Above the average district in the state.
- Progress Not Detectably Different from the average district in the state.
- Progress significantly Below the average district in the state.

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School Report

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Back Print Reports Districts Schools Tests Subjects

2008 Pennsylvania School Value Added Report for Kyle High School in Eta School District Test Math

Test	Grade	Year	N	Mean Student Score	Mean Score %ile	Mean Pred Score	Pred. Score %ile	School Effect	Effect Std Err	School vs State
Math	11	2008	47	1501.5	74	1477.1	69	24.4	2.1	Above

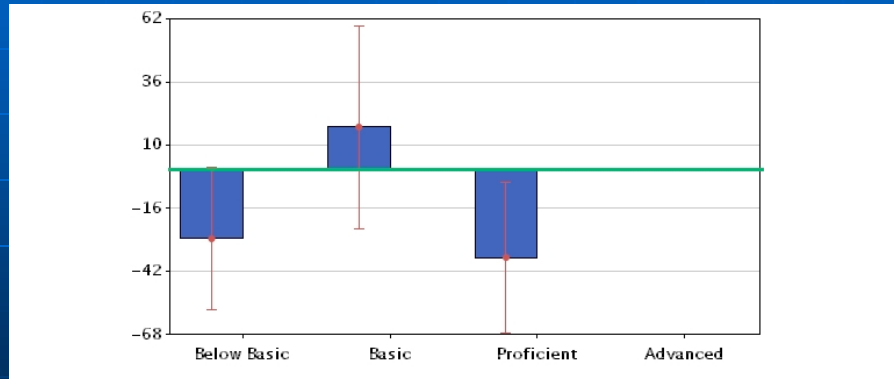
- Progress significantly Above the average school in the district.
- Progress Not Detectably Different from the average school in the district.
- Progress significantly Below the average school in the district.

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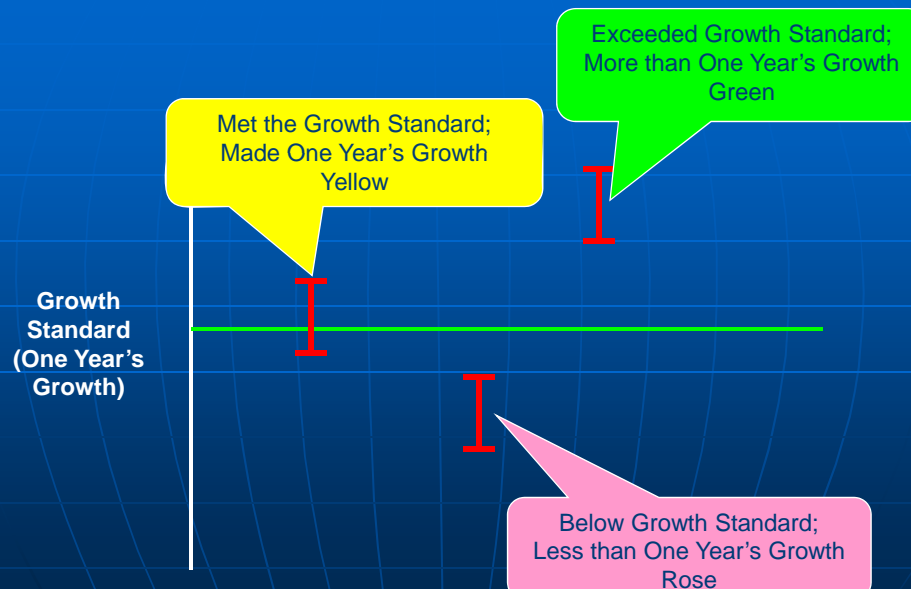
To view additional reports, click on the underlined numbers or words.

PVAAS Performance Diagnostic Report

The Key is the RED Whisker!



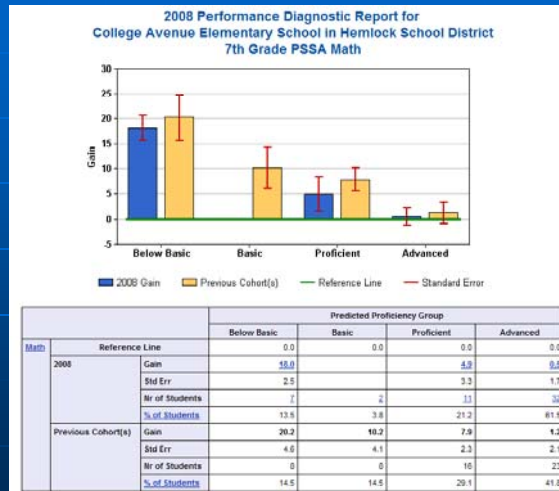
What the whiskers tell us...



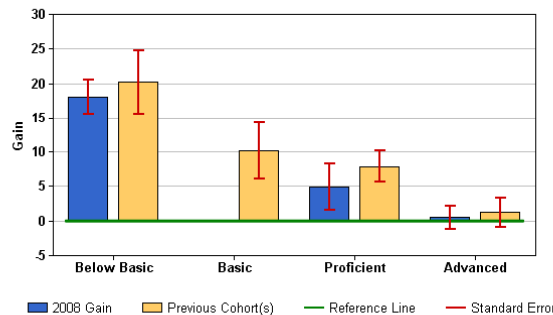
Performance Diagnostic Report

Every performance levels (below basic, basic, proficient, advanced) in each grade has met or exceeded a year's worth of growth?

("Getting Results!"™, p. 12)



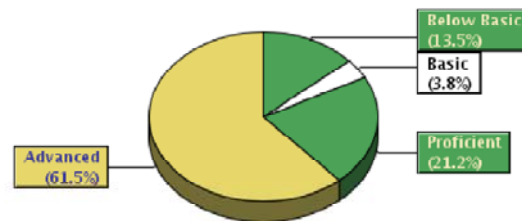
2008 Performance Diagnostic Report for
College Avenue Elementary School in Hemlock School District
7th Grade PSSA Math



			Predicted Proficiency Group			
			Below Basic	Basic	Proficient	Advanced
Math	2008	Reference Line	0.0	0.0	0.0	0.0
		Gain	18.0		4.9	0.5
		Std Err	2.5		3.3	1.7
		Nr of Students	7	2	11	32
		% of Students	13.5	3.8	21.2	61.5
	Previous Cohort(s)	Gain	20.2	10.2	7.9	1.2
		Std Err	4.6	4.1	2.3	2.1
		Nr of Students	8	8	16	23
		% of Students	14.5	14.5	29.1	41.8

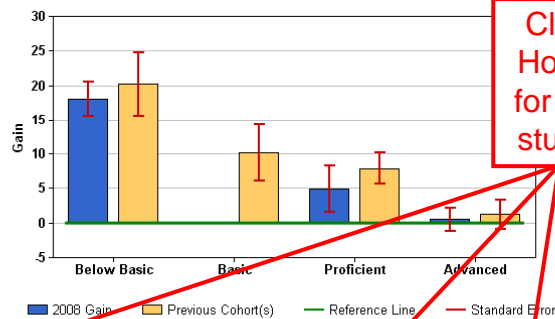
Greater Detail – based on % of students

**% of Students by Projected Performance Level for
College Avenue Elementary School in Hemlock School District
7th Grade PSSA Math
2008 Students**



■ The subgroup's progress was at least one standard error above the Reference Line.
■ The subgroup's progress was within one standard error of the Reference Line.
■ The subgroup's progress was at least one standard error below the Reference Line.
■ There were not enough students to define progress.

**2008 Performance Diagnostic Report for
College Avenue Elementary School in Hemlock School District
7th Grade PSSA Math**



Click on
Hot Keys
for lists of
students.

		Predicted Proficiency Group			
		Below Basic	Basic	Proficient	Advanced
Math	Reference Line	0.0	0.0	0.0	0.0
	2008 Gain	18.0	4.6	2.3	1.2
	Std Err	2.5	3.3	1.7	1.2
	Nr of Students	7	2	11	32
	% of Students	13.5	3.8	21.2	61.5
Previous Cohort(s)	Gain	20.2	10.2	7.9	1.2
	Std Err	4.6	4.1	2.3	2.1
	Nr of Students	8	8	16	23
	% of Students	14.5	14.5	29.1	41.8

Student Lists from Performance Diagnostic Reports

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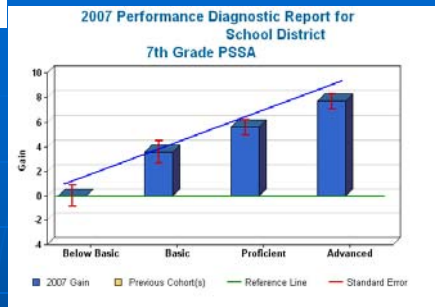
Back Print Reports Subjects

**2008 PSSA (Grade 7):
Math Students in Subgroup 3**

Student Name	State NCE	Perf Level	School Name
BEHNE, ROBYN	73	ADV	College Avenue Elementary School
BEMENT, JESUS	54	P	College Avenue Elementary School
CHILL, CHONG	60	P	College Avenue Elementary School
DETRICK, KATHI	55	P	College Avenue Elementary School
PRIDGEN, CLINTON	55	P	College Avenue Elementary School
RIEFFENBERGER, LON	46	P	College Avenue Elementary School
RIVIE, GRACIELA	68	ADV	College Avenue Elementary School
SCHERFF, MAGGIE	60	P	College Avenue Elementary School
ULLAH, JACOB	61	P	College Avenue Elementary School
VERNOY, COURTNEY	54	P	College Avenue Elementary School
VOORHIS, JUDI	65	ADV	College Avenue Elementary School

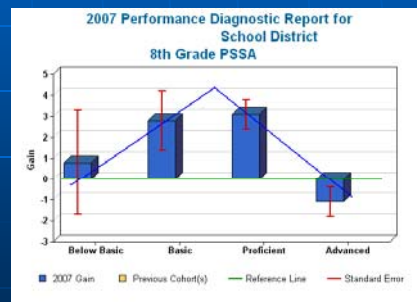
Performance Levels:
BB - Below Basic
B - Basic
P - Proficient
ADV - Advanced

A

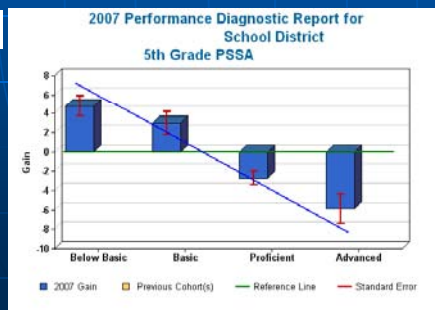


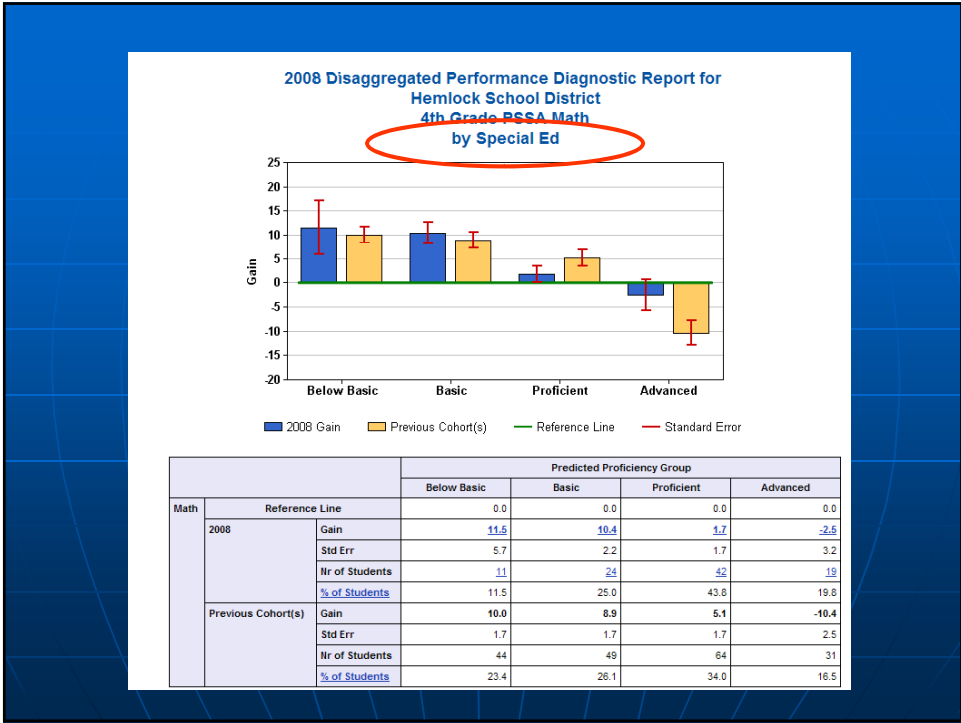
Patterns of Growth

C



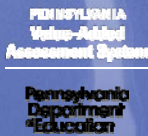
B






PA's Intent for PVAAS

- Another Tool for Continuous Improvement
- Measure of Growth to Add to Achievement/Status Measures
- Not to Be Used in Isolation
- No Teacher-Level Analyses


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Questions:

**PVAAS Materials or
Statewide Implementation**

pdepvaas@iu13.org

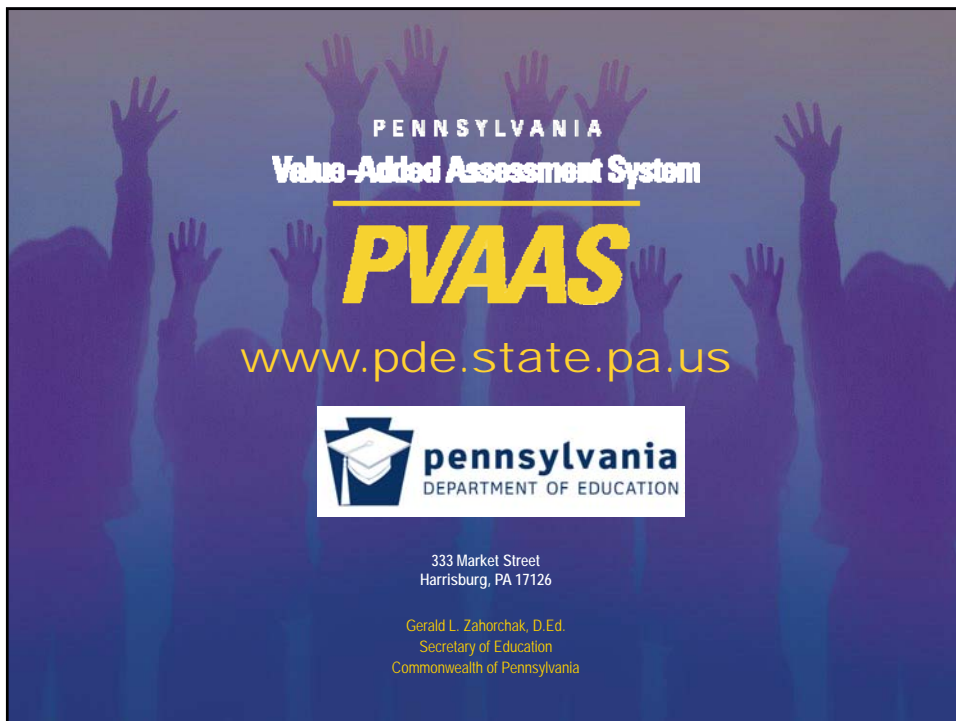
717-606-1911

PVAAS Report Web Site

<https://pvaas.sas.com>

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www.pde.state.pa.us

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